Abstract

The present invention relates to a method for correcting the position of the angle marks of an incremental gear of a rotary speed sensor and/or rotary angle sensor of an internal combustion engine and to a system therefor.

The present invention is characterized by the following steps:

a) recording the angle marks (k) using the rotary speed sensor and/or the rotary angle sensor (1,2,3,4),

b) measuring the combustion chamber pressure ($p_{zyl}(1)$, $p_{zyl}(2)$,....$p_{zyl}(2M/Z)$) in the respective cylinder (5a, 5b) of the internal combustion engine,

c) assigning a measured pressure value ($p_{zyl}(1)$, $p_{zyl}(2)$ ... $p_{zyl}(2M/Z)$) to the recorded angle mark positions ($\varphi_{inkr,real}(k)$),

d) possibly correcting the measured pressure values ($p_{zyl}(1)$, $p_{zyl}(2)$ ... $p_{zyl}(2M/Z)$) in a signal-conditioning device (12),

e) storing the recorded angle mark positions ($\varphi_{inkr,real}(k)$) with the appertaining, measured pressure values ($p_{zyl}(1)$, $p_{zyl}(2)$ ... $p_{zyl}(2M/Z)$) in a measured value table (11),

f) storing of the ideal pressure values $p_{zyl,ideal}(1)$, $p_{zyl,ideal}(2)$,...$p_{zyl,ideal}(2M/Z)$ derived at the ideal angle mark positions ($\varphi_{inkr,ideal}(k)$) in a reference table (9),

g) comparing the pressure values ($p_{zyl}(1)$, $p_{zyl}(2)$ ... $p_{zyl}(2M/Z)$), that were measured and possibly preprocessed in the signal-conditioning device (12) to the ideal pressure values $p_{zyl,ideal}(1)$, $p_{zyl,ideal}(2)$ ... $p_{zyl,ideal}(2M/Z)$,

h) determining deviations ($\Delta\varphi_{KW,Korr}$) of the measured angle mark positions ($\varphi_{inkr,real}(k)$) from the ideal angle mark positions ($\varphi_{inkr,ideal}(k)$), at the corresponding cylinder pressure values ($p_{zyl}(1) = p_{zyl,ideal}(1)$, $p_{zyl}(2) = p_{zyl,ideal}(2)$, $p_{zyl}(2M/Z) = p_{zyl,ideal}(2M/Z)$) in an evaluation unit (13), and

i) correcting the measured angle mark positions ($\varphi_{inkr,real}(k)$) by the deviations determined ($\Delta\varphi_{KW,Korr}$).

Fig. 2